

# Calibration Report: Pyrheliometers

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## SUMMARY

Calibration date: 2014 July 26.  
Next calibration due: 2016 July 26.  
Application period: 2014 August 01 through 2016 August 01.  
Reference standard: AHF-31041.

The calibration coefficients and their associated uncertainties (U95%) have been determined for three pyrheliometers. The unit of the calibration coefficients (S) is  $\mu\text{V}/(\text{W}/\text{m}^2)$ . This calibration coefficient can be traced to the World Radiation Reference determined by the World Standard Group (WSG) kept at the Physikalisch-Meteorologisches Observatorium in Davos Switzerland, Through the 2010 International Pyrheliometer Comparison (IPC XI) The test pyrheliometers were attached specific Campbell 10X data loggers, and these calibrations may not be valid on other loggers. The logger-pyrheliometer combination is calibrated with respect to the WSG.

The sensitivity factor and its associated uncertainty (95%) are as follows:

Manufacturer	Serial Number	logger $\mu\text{V}/(\text{W}/\text{m}^2)$	S U95	Logger
Kipp and Zonen	CH1-010254	10.68	$\pm 0.71\%$	23X- 2216

## Application

$$I = (\text{mV output})/S \pm \text{sqrt}(2)*U95\%$$

Where: I = the irradiance measured by the pyrheliometer  
(mV output) = microvolt output of the pyrheliometer  
S = calibration coefficient of the pyrheliometer  
U95% = the 95 % confidence level of a field measurement.

For more information see:  
Pyrheliometers\_cals\_2014-07-26-private.docx